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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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EXAMINER	
MILORD, MARCEAU	

ART UNIT	PAPER NUMBER
2682	

DATE MAILED: 03/13/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)
	10/768,223	TERRY ET AL.
	Examiner	Art Unit
	Marceau Milord	2682

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *16 December 2005*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1,2,5 and 11-33* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☐ Claim(s) *1,2,11-16,19-22,24-28 and 31-33* is/are rejected.

7)☒ Claim(s) *5,17,18,23,29 and 30* is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Double Patenting

1. The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. A nonstatutory obviousness-type double patenting rejection is appropriate where the conflicting claims are not identical, but at least one examined application claim is not patentably distinct from the reference claim(s) because the examined application claim is either anticipated by, or would have been obvious over, the reference claim(s). See, e.g., In re Berg, 140 F.3d 1428, 46 USPQ2d 1226 (Fed. Cir. 1998); In re Goodman, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); In re Longi, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); In re Van Ornum, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); In re Vogel, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and In re Thorington, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) or 1.321(d) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent either is shown to be commonly owned with this application, or claims an invention made as a result of activities undertaken within the scope of a joint research agreement.

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

2. Claims 21-33 are rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 6-11 of U.S. Patent No. 6909901 B2. Although the conflicting claims are not identical, they are not patentably distinct from each other because the removal of the features of a base station allocating a given number of timeslots to the preferred MTs according to the downlink channel quality measurements and the amount of downlink data available for transmission to the given MTs; and the base station transmitting the designated blocks of downlink data to the given MTs in accordance with the allocated timeslots after the given MTs respond to the request is not non-obvious over the claims of 6909901 B2 and therefore is not patentably distinct from each other.

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

4. Claims 1-2, 11-16, 19-22, 24-28, 31-33 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ward et al (US Patent No 5701294) in view of Budka et al (US Patent No 6330288 B1) and Olofsson et al (US Patent No 6167031).

Regarding claims 1-2, 11-14, Ward et al discloses a method for a plurality of user equipment mobile terminals (fig. 3A and fig. 6) which optimize radio resource utilization and adjust data rates, the method comprising: each UE receiving a request for a channel quality measurement (col. 3, lines 39-56; col. 5, lines 8-19); each UE transmitting the results of the channel quality measurement (col. 5, lines 19-67; col. 7, line 44- col. 8, line 16); allocating radio resources used by the UEs in response to the results of the channel quality measurements (col. 6, line 46- col. 7, line 16); and each UE receiving a communication signal in accordance with said allocation (figs. 6-7; col. 7, line 4- col. 8, line 55).

However, Ward does not specifically disclose the features of a communication signal that indicates a particular coding rate, modulation type, wherein the results of the channel quality measurements are used to determine which of a plurality of time slots are to be used.

On the other hand, Budka et al, from the same field of endeavor, discloses a wireless data network, such as a General Packet Radio Service network, a transmitter uses one of k coding/modulation schemes for transmitting data. The transmitter initially selects a coding/modulation scheme, C, as a function of carrier-to-interference ratio measurements. The transmitter then calculates the number of blocks, required to transmit a number of data packets, using the coding/modulation scheme. In addition, the transmitter calculates the number of blocks required to transmit the number of data packets, for each coding/modulation scheme that is stronger than the selected coding/modulation scheme. The transmitter finally selects that

coding/modulation scheme that results in transmitting the number of data packets using the strongest coding/modulation scheme. As a result, each block is transmitted using the strongest coding/modulation scheme available.

Olofsson et al also discloses a communication system that supports multiple modulation and channel coding schemes that selects an optimum RF link by measuring link quality parameters, such as C/I ratio. All of the available RF links are characterized based on the measured link quality parameters by calculating mean values and variances of the parameters. Based on the characterization of the RF link, user quality values, such as user data throughput and speech quality values, are estimated. The communication system selects the RF link that provides the best user quality value (col. 4, lines 43-65). In addition, the channel characteristics are derived based on measurements of link quality parameters over a predefined period. In this way, the system estimates user quality values provided by available combinations of modulation and channel coding schemes of one or more RF links (col. 6,lines 40-65). The system calculates the mean values of such link quality parameters as C/I ratio or BER values that are obtained over the predefined time period. Based on measured link quality parameters over the predefined time period, the system also determines the variances of one or more of the link quality parameters (col. 7, lines 1-27). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to apply the technique of Olofsson to the modified system of Buddka and Ward in order to allocate time slots based upon the estimated radio channel quality and achieve optimum voice quality over a broad range of carrier to interference ratio conditions.

Regarding claims 15-16, 18-20, Ward et al discloses a communication system including a plurality of user equipment mobile terminals and a base station, wherein a subset of the UEs

have pending downlink transmissions, a method of minimizing overhead signaling and optimizing radio resource utilization, the method comprising: each of the UEs in the subset receiving from the base station a request to begin channel quality measurements (col. 3, lines 39-56; col. 5, lines 8-19); each of the UEs in the subset transmitting to the base station the results of the channel quality measurements (col. 5, lines 19-67; col. 7, line 44- col. 8, line 16); the base station determining which of the UEs in the subset will make the best use of radio resources (col. 6, line 46- col. 7, line 16; figs. 6-7; col. 7, line 4- col. 8, line 55).

However, Ward does not specifically disclose the steps of receiving a communication signal from the base station that indicates a particular coding rate, modulation and at least one allocated time slot.

On the other hand, Budka et al, from the same field of endeavor, discloses a wireless data network, such as a General Packet Radio Service network, a transmitter uses one of k coding/modulation schemes for transmitting data. The transmitter initially selects a coding/modulation scheme, C, as a function of carrier-to-interference ratio measurements. The transmitter then calculates the number of blocks, required to transmit a number of data packets, using the coding/modulation scheme. In addition, the transmitter calculates the number of blocks required to transmit the number of data packets, for each coding/modulation scheme that is stronger than the selected coding/modulation scheme. The transmitter finally selects that coding/modulation scheme that results in transmitting the number of data packets using the strongest coding/modulation scheme. As a result, each block is transmitted using the strongest coding/modulation scheme available.

Olofsson et al also discloses a communication system that supports multiple modulation and channel coding schemes that selects an optimum RF link by measuring link quality parameters, such as C/I ratio. All of the available RF links are characterized based on the measured link quality parameters by calculating mean values and variances of the parameters. Based on the characterization of the RF link, user quality values, such as user data throughput and speech quality values, are estimated. The communication system selects the RF link that provides the best user quality value (col. 4, lines 43-65). In addition, the channel characteristics are derived based on measurements of link quality parameters over a predefined period. In this way, the system estimates user quality values provided by available combinations of modulation and channel coding schemes of one or more RF links (col. 6,lines 40-65). The system calculates the mean values of such link quality parameters as C/I ratio or BER values that are obtained over the predefined time period. Based on measured link quality parameters over the predefined time period, the system also determines the variances of one or more of the link quality parameters (col. 7, lines 1-27). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to apply the technique of Olofsson to the modified system of Buddka and Ward in order to allocate time slots based upon the estimated radio channel quality and achieve optimum voice quality over a broad range of carrier to interference ratio conditions.

Hashem et al also discloses a method and apparatus for selecting and signaling the identity of sub-carriers to be used for transmission of data in a radio communication system, and for using other sub-carriers. A remote unit determines which sub-carriers are acceptable for use in data transmission by comparing the signal to interference ratio of each sub-carrier with a threshold. A base station transmits data over the acceptable sub-carriers at the optimum link

mode or link modes (col. 2, lines 25- 66). Furthermore, the remote unit may calculate the average channel quality of groups of sub-carriers whose channel quality is above the threshold, in which case the average channel quality is transmitted to the base station. The base station receives a return signal, and extracts from the return signal a sequence of numbers, and at least one value by which the base station can determine at least one link mode. In addition, the base station may allocate for low sensitivity data transmission sub-carriers within some of the unacceptable sub-carriers, may allocate for data transmission at a low transmission rate sub-carriers within some of the remaining unacceptable sub-carriers, and may divert transmission power from the remaining unused unacceptable sub-carriers to other sub-carriers (col. 3, lines 3-39; col. 4, line 4- col. 5, line 54). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to apply the technique of Hashem to the communication system of Ward in order to allocate time slots based upon the estimated radio channel quality and achieve optimum voice quality over a broad range of carrier to interference ratio conditions.

Regarding claims 21-22, 24-27, Ward et al discloses a wireless communication system for minimizing overhead signaling and optimizing radio resource utilization, the system comprising: a base station; and a plurality of user equipment mobile terminals station, wherein the base station sends a request to begin channel quality measurements only to a subset of the UEs that have pending downlink transmissions, the UEs in the subset transmit to the base station the results of the channel quality measurements (col. 3, lines 39-56; col. 5, lines 8-19; col. 5, lines 19-67; col. 7, line 44- col. 8, line 16; col. 6, line 46- col. 7, line 16; figs. 6-7; col. 7, line 4- col. 8, line 55).

However, Ward does not specifically disclose the features of a base station that indicates a particular coding rate, modulation type and at least one allocated slot.

On the other hand, Budka et al, from the same field of endeavor, discloses a wireless data network, such as a General Packet Radio Service network, a transmitter uses one of k coding/modulation schemes for transmitting data. The transmitter initially selects a coding/modulation scheme, C, as a function of carrier-to-interference ratio measurements. The transmitter then calculates the number of blocks, required to transmit a number of data packets, using the coding/modulation scheme. In addition, the transmitter calculates the number of blocks required to transmit the number of data packets, for each coding/modulation scheme that is stronger than the selected coding/modulation scheme. The transmitter finally selects that coding/modulation scheme that results in transmitting the number of data packets using the strongest coding/modulation scheme. As a result, each block is transmitted using the strongest coding/modulation scheme available.

Olofsson et al also discloses a communication system that supports multiple modulation and channel coding schemes that selects an optimum RF link by measuring link quality parameters, such as C/I ratio. All of the available RF links are characterized based on the measured link quality parameters by calculating mean values and variances of the parameters. Based on the characterization of the RF link, user quality values, such as user data throughput and speech quality values, are estimated. The communication system selects the RF link that provides the best user quality value (col. 4, lines 43-65). In addition, the channel characteristics are derived based on measurements of link quality parameters over a predefined period. In this way, the system estimates user quality values provided by available combinations of modulation

and channel coding schemes of one or more RF links (col. 6,lines 40-65). The system calculates the mean values of such link quality parameters as C/I ratio or BER values that are obtained over the predefined time period. Based on measured link quality parameters over the predefined time period, the system also determines the variances of one or more of the link quality parameters (col. 7, lines 1-27). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to apply the technique of Olofsson to the modified system of Buddka and Ward in order to allocate time slots based upon the estimated radio channel quality and achieve optimum voice quality over a broad range of carrier to interference ratio conditions.

Regarding claims 28, 31-33, Ward et al discloses a wireless communication system for minimizing overhead signaling and optimizing radio resource utilization, the system comprising: a base station; and a plurality of user equipment mobile terminals station, wherein the base station sends a request to begin channel quality measurements only to a subset of the UEs that have pending downlink transmissions, the UEs in the subset transmit to the base station the results of the channel quality measurements (col. 3, lines 39-56; col. 5, lines 8-19; col. 5, lines 19-67; col. 7, line 44- col. 8, line 16; col. 6, line 46- col. 7, line 16; figs. 6-7; col. 7, line 4- col. 8, line 55).

However, Ward does not specifically disclose the features of a base station that indicates a particular coding rate, modulation type and at least one allocated slot.

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transmitter then calculates the number of blocks, required to transmit a number of data packets, using the coding/modulation scheme. In addition, the transmitter calculates the number of blocks required to transmit the number of data packets, for each coding/modulation scheme that is stronger than the selected coding/modulation scheme. The transmitter finally selects that coding/modulation scheme that results in transmitting the number of data packets using the strongest coding/modulation scheme. As a result, each block is transmitted using the strongest coding/modulation scheme available.

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Buddka and Ward in order to allocate time slots based upon the estimated radio channel quality and achieve optimum voice quality over a broad range of carrier to interference ratio conditions.

5. Claims 5, 17-18, 23, 29-30 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Response to Arguments

6. Applicant's arguments with respect to claims 1-2, 11-16, 19-22, 24-28, 31-33 have been considered but are moot in view of the new ground(s) of rejection.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Marceau Milord whose telephone number is 571-272-7853. The examiner can normally be reached on Monday-Thursday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, To H. Doris can be reached on 571-272-7629. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

MARCEAU MILORD

Marceau Milord

Primary Examiner

Art Unit 2682

MARCEAU MILORD
PRIMARY EXAMINER